EVALUATION OF TOMATO VARIETIES FOR MECHANICAL HARVEST

Ohio Agricultural Research and Development Center

Northwest Branch, Custar, Ohio

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DEPARTMENT OF HORTICULTURE

OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER

WOOSTER, OHIO

Horticulture Mimeograph Series No. 367, August 6, 1970

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THE OHIO AGRICULTURAL RESEARCH AND DEVELOPMENT CENTER
Northwest Branch, Custar, Ohio

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August 6, 1970

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Walter N. Brown*

The 1969 processing tomato evaluation trials were organized to permit complete machine harvest and include these trial varieties and lines which have potential for mechanical harvest. Thirteen varieties or lines in 3-row plots, replicated five times were to be machine harvested approximately one week prior to optimum harvest, at optimum harvest and one week after optimum harvest.

CULTURAL INFORMATION

Plants: Greenhouse and frame-grown, 70 per standard flat from seed sown April 18.

Transplanted to Field: First planting May 29, second planting June 7, with single row transplanter, using 21-53-0 starter at 5 lbs./100 gal. of water; ½ pint per plant.

Fertilizer: 1500 lbs./A of 0-20-20 applied prior to plowing in fall of 1968. Previous crop - grain sorgum.

Plot Size and Spacing: 30 plants per row in three-row plots, spaced 18" in rows five feet apart.

Herbicide: Broadcast Amiben 10% granular at 40 lbs./A on July 3.

Insect and Disease Control: The following schedule of materials was applied:

July 13	Manzate	6#/A		
21	"	3#/A		
30	"	3#/A	plus	1½# TDE
August 10	Copper	6#/A	+	1½# TDE
22	Manzate	3#/A	+	1½# TDE + ½# Dieldrin
29	"	"	+	1# malathion
Sept. 6	Manzate	3#/A		

Weather Data

	Temperature	Rainfall
June	68.2	4.11
July	73.7	1.38
August	72.1	1.33
September	64.4	4.71

* Department of Horticulture, OARDC, 2001 Fyffe Court, Columbus, Ohio 43210. Deceased, July 24, 1969

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HARVEST INFORMATION

The plots were harvested with a west coast model FMC Tomato Harvester. Each entry was harvested so that the first harvest was approximately one week prior to optimum, the second at optimum, and the third one week after optimum. This was not always possible since some entries appeared not to hold as well as others and a few were so late that only two harvests were made before killing frosts.

A composite sample (consisting of 2 lug-boxes) of field-run fruit was taken from the machine prior to any sorting or grading. The sample was graded into usable No. 1 and 2 (low No. 2 for color break-point) and in all other respects meeting U. S. Cannery Grade; culls and greens. Greens included all colors of fruits below U. S. No. 2 for color. All grades were counted and weighed and the balance of the fruit from the row plot was weighed. All values in Table 1. were computed on the basis of 30 plants per plot and 5 replications. The percentage values given in Table I are usable fruit No. 1 and 2s expressed as a per cent of the total fruit harvested.

SOURCE OF SEED

Code	Source
H-1	Joseph Harris Co., Inc., Moreton Farm, Rochester, New York 14624
H-3	H. J. Heinz Co., P. O. Box 127 Bowling Green, Ohio 43402
L-3	Libby, McNeill & Libby Co., Larry Holl, Leipsic, Ohio 45856
M-4	Maryland Agric. Exp. Sta., Dept. of Horticulture, College Park, Md. 20740
O-1	Ohio Agric. Res. & Devel. Cent., W. N. Brown, Dept. of Horticulture, 2001 Fyffe Ct., Columbus, Ohio 43210
T-1	Texas Agric. Exp. Sta., P. W. Leeper, Dept. of Horticulture, Weslaco, Tex.

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TABLE I

Variety, Lot Number and Source	Harv. Date	Yield per Acre Red Fruit Grades						Green	Usable Fruit Avg. Size
		No.1	No 2	Culls	Total Usable 1 & 2		Red		
		T/A	T/A	T/A	T/A	%	T/A	T/A	lbs.
1. Fireball VR	9/4	2.6	4.7	0.8	7.3	62.7	8.1	3.6	.268
2089 H-1	9/10	4.3	1.8	1.1	6.1	64.4	7.2	2.4	.272
2. Bouncer	9/19	4.5	4.1	0.3	8.6	47.8	8.9	9.1	.241
2012 H-1	9/26	4.4	5.9	0.7	10.3	52.0	11.0	8.8	.228
	10/3	3.9	6.8	0.8	10.7	57.4	11.5	7.2	.258
3. Heinz 1548	9/4	2.6	3.8	0.3	6.4	53.3	6.7	5.2	.257
T-69 H-3	9/10	4.4	3.5	0.7	7.9	62.8	8.6	4.0	.225
4. Libby 1626	9/10	6.8	1.2	0.4	8.0	55.6	8.4	6.0	.199
T-69 L-3	9/19	8.0	1.7	1.2	9.7	63.6	10.9	4.4	.170
	9/26	7.9	1.9	1.1	9.8	70.1	10.9	3.0	.169
5. Md. 87-A	9/19	6.8	2.4	0.6	9.2	45.5	9.8	10.4	.138
T-69 M-4	9/26	8.5	4.5	0.9	13.0	61.2	13.9	7.3	.122
	10/3	7.7	5.9	1.0	13.6	68.6	14.6	5.3	.124
6. Chico Grande III	9/4	3.7	5.7	0.1	9.4	69.6	9.5	4.0	.114
T-69 T-1	9/10	8.7	3.0	0.4	11.7	84.6	12.1	1.7	.107
	9/19	9.6	4.2	0.4	13.8	87.0	14.2	1.7	.124
7. Heinz 14451	9/10	3.9	1.3	0.3	5.2	41.7	5.5	7.0	.116
T-69 H-3	9/19	7.5	2.7	0.8	10.2	54.2	11.0	7.9	.120
	9/26	8.2	3.0	1.3	11.2	65.5	12.5	4.5	.105
8. Heinz 14456	9/10	7.0	2.0	0.7	9.0	58.5	9.7	5.7	.176
T-68 H-3	9/19	7.7	3.2	0.9	10.9	64.3	11.8	5.2	.169
	9/26	8.2	3.1	0.8	11.3	67.8	12.1	4.6	.155
9. La Bonita	9/10	7.4	3.7	0.2	11.1	69.8	11.3	4.6	.104
T-68 T-1	9/19	8.7	5.2	0.6	13.9	76.8	14.5	3.5	.114
	9/26	8.1	5.9	1.6	14.0	74.0	15.6	3.3	.111
10. Harvester	9/10	5.8	2.6	0.3	8.4	55.2	8.7	6.5	.104
NW-67Bk O-1	9/19	7.1	2.8	0.6	10.0	56.0	10.6	7.3	.109
	9/26	6.1	3.3	1.2	9.4	58.6	10.6	5.4	.104

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		No. 1	No. 2	Culls	Total Usable 1 & 2		Red		
		T/A	T/A	T/A	T/A	%	T/A	T/A	lbs.
11. Mecheast 22 8-1123 H-1	9/19	3.8	2.3	0.3	6.1	40.0	6.4	8.9	.188
	9/26	5.0	3.0	1.2	8.0	47.6	9.1	7.6	.149
	10/3	3.5	4.7	2.2	8.2	46.7	10.4	7.1	.194
12. Roma VF 2377 H-1	9/19	6.8	2.5	0.2	9.3	53.6	9.5	0.2	.135
	9/26	7.0	3.5	0.7	10.5	64.7	11.2	5.1	.123
	10/3	7.8	5.4	0.6	13.2	69.1	13.7	5.3	.127
13. Heinz 1370 2042 H-1	9/19	5.9	4.2	0.5	10.1	53.2	10.6	8.4	.186
	9/26	5.5	4.6	0.9	10.1	58.6	11.0	6.2	.176
	10/3	5.5	4.8	1.0	10.3	57.8	11.3	6.5	.213

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